

AMENDMENTS TO THE SPECIFICATION:

Please replace the paragraph beginning at page 53, line 15, with the following amended paragraph:

The crosslinkable aromatic polyazole having a protonic acid group of the invention can be roughly classified into ~~polybenzimidazole~~ polybenzimidazole wherein -Z- in the repeating units represented by the formulas (32) and (33) is -NH- and polybenzoxazole wherein -Z- is -O-.

Please replace the paragraph beginning at page 53, line 20, with the following amended paragraph:

The ~~polybenzimidazole~~ polybenzimidazole wherein -Z- is -NH- can be prepared by polycondensing an aromatic tetraamine and an aromatic dicarboxylic acid ester by known method. The polybenzoxazole wherein -Z- is -O- can be prepared by polycondensing a diaminodihydroxy compound and an aromatic dicarboxylic acid by known method.

Please replace the paragraph beginning at page 54, line 1, with the following amended paragraph:

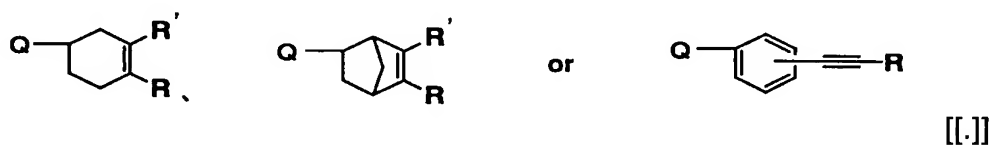
~~Polybenzimidazoles~~ Polybenzimidazoles or polybenzoxazoles having a protonic acid group can be obtained by using a monomer containing a protonic acid group at the polycondensation. Further aromatic polyazoles having a protonic acid group can also be obtained by introducing a desired amount of the protonic acid group into aromatic polyazoles such as ~~polybenzimidazole~~ polybenzimidazole or polybenzoxazoles by a known sulfonation or alkyl sulfonation method, etc.

Please replace the paragraph bridging pages 54 and 55 with the following amended paragraph:

[Example 2 of ~~crosslinkable~~ crosslinkable aromatic resin having a protonic acid group - ~~crosslinkable~~ crosslinkable aromatic resin having a protonic acid group comprising a carbonyl group-containing resin and an alkyl group or alkylene group-containing resin]

Please replace the paragraph beginning at page 72, line 2, with the following amended paragraph:

~~Polybenzimidazoles~~ Polybenzimidazoles wherein -Z- is -NH- can be prepared by reacting an aromatic tetraamine and an aromatic dicarboxylic acid ester by known methods. Polybenzoxazoles wherein -Z- is -O- can be produced by reacting a diaminohydroxyl compound and an aromatic dicarboxylic acid by known methods. In this case, when a compound represented by the formula: $Q-R^a-CH=CH-R^b$, $Q-R^a-C\equiv C-R^b$,



(wherein Q is a group capable of reacting with condensation monomers, such as NH_2 , a carboxylic acid group, a carboxylic acid chloride group, carboxylic acid ester group, etc.; R^a is phenylene and R^b is H or phenyl; R and R' , which may be the same or different, represent hydrogen, methyl, ethyl or phenyl) is present as an end-capper, the aromatic polyazole having the crosslinkable group described above at the molecular end can be obtained.

Please replace the paragraph beginning at page 73, line 21, and ending on page 74, line 4, with the following amended paragraph:

As an aromatic dihydroxy compound, hydroquinone, resorcin, catechol, 4,4'-dihydroxy biphenyl, 4,4'-dihydroxy diphenyl sulfide, 4,4'-dihydroxy diphenyl ether, 4,4'-dihydroxy diphenyl sulfone, 4,4'-dihydroxy ~~benzophenone~~ benzophenone, 2,2-bis(4-hydroxy phenyl) propane, 1,1,1,3,3,3-hexafluoro-2,2-bis(4-hydroxy phenyl) propane, 1,4-bis(4-hydroxy phenyl) benzene, α , α' -bis (4-hydroxy phenyl)-1, 4-dimethyl benzene, α , α' -bis(4-hydroxy phenyl)-1, 4-diisopropyl benzene, α , α' -bis(4-hydroxy phenyl)-1, 3-diisopropyl benzene, 1,4-bis(4-hydroxy benzoyl) benzene, 3,3-difluoro -4,4'- dihydroxy biphenyl, 9,9-bis(4-hydroxy phenyl) fluorene can be cited.

Please replace the paragraph beginning at page 75, line 20 and ending on page 76, line 4, with the following amended paragraph:

As a dihydroxy compound having a protonic acid group, sulfonated compound and alkyl sulfonated compound of the above aromatic dihydroxy compound and an aromatic dihydroxy compound containing an alkyl group can be cited. In addition, the sulfonated compound and the alkyl sulfonated compound include their salt of alkali metal such as Na, K, etc. Sulfonated compounds can be obtained by a method of sulfonating an aromatic dihydroxy compound with a known sulfonating agent such as concentrated sulfuric acid (Macromol. Rapid. Commun., 19, 135(1998)), etc. Alkyl sulfonated compounds can be obtained by a method of making an aromatic dihydroxy compound react with ~~formaldehyde~~ formaldehyde and sulfurous acid (J. Amer. Chem. Soc., 92, 861(1970)), etc.

Please replace the heading at page 80, line 6, with the following amended heading:

[Examples of aromatic ~~tetracarboxylic~~ tetracarboxylic acid dianhydride]

Please replace the paragraph beginning at page 80, line 7, with the following amended paragraph:

As examples of aromatic ~~tetracarboxylic~~ tetracarboxylic acid dianhydride that can be used when the aromatic resin having a protonic acid group of the present invention is prepared by polycondensation, pyromellitic dianhydride, 3,3',4,4'-biphenyl ~~tetracarboxylic~~ tetracarboxylic acid dianhydride, 2,2',3,3'-biphenyl ~~tetracarboxylic~~ tetracarboxylic acid dianhydride, bis(3,4-dicarboxyphenyl) ether dianhydride, bis(3,4-dicarboxyphenyl) sulfide dianhydride, bis(3,4-dicarboxyphenyl) ~~sulfen~~ sulfone dianhydride, bis(3,4-dicarboxyphenyl) methane dianhydride, bis(3,4-dicarboxyphenyl) propane dianhydride, 1,1,1,3,3,3-hexafluoro-2,2-bis(3,4-dicarboxyphenyl) propane dianhydride, 1,4,5,8-naphthalene ~~tetracarboxylic acid~~ tetracarboxylic acid dianhydride, 3,3',4,4'-benzophenone ~~tetracarboxylic acid~~ tetracarboxylic acid dianhydride, 3-methyl-1,2,4,5-benzene ~~tetracarboxylic acid~~ tetracarboxylic acid dianhydride, bis(5-methyl-3,4-dicarboxyphenyl) ether dianhydride, bis(5-methyl-3,4-dicarboxyphenyl) ~~sulfen~~ sulfone dianhydride, bis(5-methyl-3,4-dicarboxyphenyl) methane dianhydride, 2,3,6,7-tetramethyl-1,4,5,8-naphthalene ~~tetracarboxylic acid~~ tetracarboxylic acid dianhydride can be cited.

Please replace the heading on the last line of page 80 with the following amended heading:

[Examples of aromatic ~~tricarboxylic~~ tricarboxylic acid ~~monochloride~~ monochloride]

Please replace the paragraph beginning at page 81, line 1, with the following amended paragraph:

As an aromatic ~~tricarboxylic~~ tricarboxylic acid ~~monochloride~~ monochloride which can be used when the aromatic resin having a protonic acid group of the present invention is prepared by polycondensation, 1,2,4-benzene trimellitic acid ~~chloride~~ chloride anhydride, 3',4,4'-biphenyl ~~tricarboxylic~~ tricarboxylic acid ~~monochloride~~ monochloride anhydride, 3',4,4'-diphenyl methane ~~tricarboxylic~~ tricarboxylic acid ~~chloride~~ chloride anhydride, 3',4,4'-diphenyl isopropane ~~tricarboxylic~~ tricarboxylic acid ~~chloride~~ chloride anhydride, 5-methyl-1,2,4-benzene ~~tricarboxylic~~ tricarboxylic acid ~~monochloride~~ monochloride anhydride, 3-methyl-3',4,4'-biphenyl ~~tricarboxylic~~ tricarboxylic acid ~~monochloride~~ monochloride anhydride, 3-methyl-3',4,4'-diphenyl methane ~~tricarboxylic~~ tricarboxylic acid ~~chloride~~ chloride anhydride, 3-methyl-3',4,4'-diphenyl sulfone ~~tricarboxylic~~ tricarboxylic acid ~~chloride~~ chloride anhydride, 3,4,4'-benzophenone ~~tricarboxylic~~ tricarboxylic acid ~~monochloride~~ monochloride anhydride can be cited.

Please replace the paragraph beginning at page 86, line 7, with the following amended paragraph:

As specific examples of a method for sulfonating the resin, a method for sulfonating with a known sulfonating agent such as concentrated sulfuric acid (Japanese Laid-open Patent Application SHO 57-25328), fuming sulfuric acid (Japanese Publication of Translation of PCT HEI 11-502245), chlorosulfonic acid (Journal of Applied Polymer Science, 70, 477 (1998)) and methane sulfonic acid (Macromolecules, 27, 6267 (1994)) can be cited. As a method for alkyl sulfonating

the resin, a method using ~~sultone~~ sulfone compounds (J. Amer. Chem. Soc., 76, 5357(1954)); a method for substituting hydrogen of aromatic ring of a resin with lithium, and exchanging it to a halogenoalkyl group with dihalogenoalkane, and then converting it into sulfoalkyl group; a method for introducing halogenobutyl group with tetramethylene halogenium ion, and then converting halogen into sulfonate group, etc. can be cited.

Please replace the paragraph bridging pages 108 and 109 with the following amended paragraph:

When a piece of the polyether ketone membrane having sulfonic acid sodium salt group obtained in (a) above was dipped in DMSO, the piece was completely dissolved in DMSO. When a piece of the membrane was dipped in water, a part dissolved therein was observed. On the other hand, the crosslinked polyether ketone membrane having of sulfonic acid sodium salt group obtained in (c) above was completely ~~insolublized~~ insolubilized in DMSO and water, and it was confirmed that chemical resistance and water resistance were improved by crosslinking.

Please replace the paragraph beginning at page 134, line 9, with the following amended paragraph:

In a 100 ml reactor equipped with a nitrogen-introducing tube, a thermometer and a stirrer, 4.06 g of the polyether ketone synthesized in Synthesis Example 4, 2.45 g (0.02 mol) of ~~propanesultone~~ propanesulfone and 10 ml of nitrobenzene were charged. While stirring, 2.9 g (0.022 mol) of anhydrous aluminum chloride was charged. The mixture was heated at 210°C for 8 hours. Then, the reaction mixture was discharged into 100 ml of ice water added with 5 ml of conc. hydrochloric acid to

terminate the reaction. The reaction solution was dropwise added to 200 ml of distilled water to precipitate the polymer. After filtration, the polymer was washed with distilled water. The polymer was dried at 150°C overnight in vacuum.

Please replace the paragraph beginning at page 150, line 14, with the following amended paragraph:

4.86 g of the sodium salt type sulfonated ~~polyetheretherketone~~ polyetheretherketone synthesized in Synthesis Example 5 and 7.00 g of the polybenzoxazole synthesized in Synthesis Example 11 were dissolved in 25 ml of NMP. The solution mixture was cast on a glass substrate and heated in an inert oven in a nitrogen atmosphere under normal pressure to remove NMP by elevating the temperature to 220°C over 4 hours and maintained at 220°C for 4 hours. Photo-crosslinking, proton exchange and measurements were performed as in Example 44. The results are shown in Table 8.

Please replace the paragraph bridging pages 170 and 171 with the following amended paragraph:

When a piece of the polyether ketone membrane having sodium sulfonate obtained above was dipped in NMP, it was ~~dissolved~~ dissolved. On the other hand, it was confirmed that the photo-crosslinked membrane of polyether ketone having a protonic acid group was completely insolubilized in NMP and water, and was improved in chemical resistance and water resistance.